



UNITED STATES PATENT AND TRADEMARK OFFICE

TS

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/764,810 | 01/16/2001 | Abraham Mendelson | 42390P10140 | 7766 |
| 8791 | 7590 | 01/12/2007 | EXAMINER | |
| BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES, CA 90025-1030 | | | KIM, HONG CHONG | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2185 | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE | | |
| 3 MONTHS | 01/12/2007 | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|-------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/764,810 | MENDELSON ET AL. | |
| | Examiner Hong C. Kim | Art Unit 2185 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 31 October 2006.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 7-9, 17-19 and 27-29 is/are allowed.
- 6) Claim(s) 1-6 10-16 20-26 30 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. Claims 1-30 are presented for examination. This office action is in response to the appeal brief filed on 10/31/06.

2. The finality of that action is withdrawn in view of the appeal brief filed on 10/31/06.

Information Disclosure Statement

3. Applicants are reminded of the duty to disclose information under 37 CFR 1.56.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6, 10, 11-16, 20, 21-26, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Okpisz et al. (Okpisz) US Patent No. 6,332,179.

As to claims 1 and 11, Okpisz discloses an apparatus comprising: a cache manager (col. 4 line 33) to manage a transfer of a trace (a cache reads on this limitation

since it contains a sequence of string of instruction or data); a first cache (Fig. 1 Ref. 13) coupled to the cache manager to evict the trace based on a replacement mechanism (col. 4 lines 50-52); and a second cache (col. 3 lines 22-24) coupled to the cache manager to receive the evicted trace based on a first number of accesses to the trace (col. 4 lines 50-52 , LFU or MFU).

As to claim 21, Okpisz further discloses an execution unit (Fig. 1 Ref. 12).

As to claims 2 and 12, Okpisz further discloses wherein the cache manager comprises a usage counter to count the first number of accesses to the trace (col. 4 line 50-52, LFU or MFU, since it requires a count).

As to claims 3 and 13, Okpisz further discloses wherein the cache manager comprises a comparator to compare a first threshold value to the first number of accesses to the trace, the first threshold value being a first fixed number or a first dynamically adjusted number (col. 4 line 50-52, LFU or MFU since it requires a count).

As to claims 4 and 14, Okpisz further discloses wherein the trace is transferred from the first cache to the second cache when the first threshold value is less than the first number of accesses to the trace (col. 4 line 50-52, LFU or MFU).

Art Unit: 2185

As to claims 5 and 15, Okpisz further discloses wherein the trace is discarded from the first cache when the first threshold value is more than or equal to the first number of accesses to the trace (col. 4 line 50-52, LFU or MFU).

As to claims 6 and 16, Okpisz further discloses comprising a level 2 (L2) cache to receive the trace transferred from one of the first and second caches using a second number of accesses to the trace (col. 3 lines 22-24, since each L1 or L2 or L3 requires a separate replacement algorithm).

As to claims 10 and 20, Okpisz further discloses wherein the replacement mechanism is a Least Recently Used (LRU) mechanism (col. 4 lines 50-52).

5. Claims 1, 11, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Witt et al. (Witt) US Patent No. 5,623,627.

As to claims 1 and 11, Witt discloses an apparatus comprising: a cache manager (col. 6 line 43, replacement algorithm reads on this limitation, since it is used in a cache controller) to manage a transfer of a trace (a cache reads on this limitation since it contains a sequence of string of instruction or data); a first cache (Fig. 2 Ref. 30) coupled to the cache manager to evict the trace based on a replacement mechanism (col. 6 line 43-47); and a second cache (Fig. 2 Ref. 60) coupled to the cache manager to receive the evicted trace based on a first number of accesses to the trace (col. 3 lines 43-47, LFU reads on this limitation, since it requires a count).

As to claim 21, Witt further discloses an execution unit (Fig. 2 Ref. 15).

Allowable Subject Matter

6. Claims 7-9, 17-19, and 27-29 are allowed.
7. It appears that this instant specification, Fig. 3 or page 5 lines 25-28 specifically, a trace cache subsystem 120, discloses allowable subject matters.

Response to Arguments

8. Applicant's arguments filed on 10/31/06 have been fully considered but they are not persuasive.

Applicant's remarks on pages 3-9 that the references not teaching neither trace cache subsystem is not considered persuasive.

Although this instant application discloses a trace cache system, it does not specifically claims a trace cache subsystem. In other words, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a trace cache subsystem) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Therefore broadly written claims are disclosed by the references cited.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached PTO-892.
2. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) days from the mail date of this letter. Failure to respond within the period for response will result in **ABANDONMENT** of the application (see 35 USC 133, MPEP 710.02, 710.02(b)).
3. When responding to the office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. ' 1.111(c).
4. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong C Kim whose telephone number is (571) 272-4181. The examiner can normally be reached on M-F 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

Art Unit: 2185

supervisor, Sanjiv Shah can be reached on (571) 272-4098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 whose telephone number is (571) 272-2100.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

7. **Any response to this action should be mailed to:**

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to TC-2100:
(703) 872-9306

Hand-delivered responses should be brought to the Customer Service Window (Randolph Building, 401 Dulany Street, Alexandria, VA 22314).

H Kim
Primary Patent Examiner
January 8, 2007

